

**WHAT IS CLAIMED IS:**

1                   1. An electrosurgical probe, comprising:  
2                   a return electrode including a return electrode head and a return  
3                   electrode filament, the return electrode head comprising a return electrode coil;  
4                   an active electrode including an active electrode head and an active  
5                   electrode filament; and  
6                   a connection block adapted for coupling the probe to an  
7                   electrosurgical power supply, the return electrode filament and the active electrode  
8                   filament independently coupled to the connection block.

9  
1                   2. The probe of claim 1, wherein the return electrode coil  
2                   comprises from about 3 to 10 turns.

3  
1                   3. The probe of claim 1, wherein the return electrode coil  
2                   comprises about 6 turns.

3  
1                   4. The probe of claim 1, wherein the return electrode coil  
2                   comprises a helix having a pitch in the range of from about 0.010 to 0.045 inches.

3  
1                   5. The probe of claim 1, wherein the return electrode coil has an  
2                   external diameter in the range of from about 0.070 to about 0.200 inches.

4  
1                   6. The probe of claim 1, wherein the return electrode coil is  
2                   oriented substantially parallel to the longitudinal axis of the return electrode  
3                   filament.

4  
1                   7. The probe of claim 1, wherein the return electrode coil is  
2                   wound from a length of wire having a distal terminus, and the wire distal terminus  
3                   is arranged within the return electrode coil.

1                   8. The probe of claim 1, wherein the return electrode coil is  
2                   wound in a proximal direction, wherein the first turn of the return electrode coil is  
3                   located at the distal end of the return electrode coil.

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1           9.       The probe of claim 1, wherein the return electrode filament  
2       has a diameter in the range of from about 0.008 to 0.030 inches.

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1           10.      The probe of claim 1, wherein a gap exists between each turn  
2       of the return electrode coil.

3

1           11.      The probe of claim 10, wherein the gap is adapted for  
2       retaining an electrically conductive liquid against a surface of the return electrode  
3       head.

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1           12.      The probe of claim 1, wherein the active electrode filament  
2       lies within an internal void of the return electrode coil.

3

1           13.      The probe of claim 1, wherein the active electrode head  
2       comprises a hook or a coil.

3

1           14.      The probe of claim 1, wherein the active electrode filament  
2       comprises a metal wire having a diameter in the range of from about 0.006 to 0.020  
3       inches.

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1           15.      The probe of claim 1, wherein the active electrode head  
2       comprises an active electrode coil.

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1           16.      The probe of claim 15, wherein the active electrode coil  
2       comprises from about 0.5 to 1.5 turns.

3

1           17.      The probe of claim 15, wherein the active electrode coil is  
2       oriented substantially orthogonal to the return electrode coil.

3

1           18.      The probe of claim 17, wherein the active electrode filament  
2       lies substantially parallel to the return electrode filament.

3

1                   19. The probe of claim 15, wherein the active electrode head  
2 includes a dividing portion, wherein the dividing portion is arranged within the  
3 active electrode coil.

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1                   20. The probe of claim 19, wherein the dividing portion at least  
2 partially divides a void within the active electrode coil.

3

1                   21. The probe of claim 20, wherein the dividing portion divides  
2 the void within the active electrode coil into two substantially equal portions.

3

1                   22. The probe of claim 19, wherein the dividing portion is  
2 arranged at an angle in the range of from about 30° to 60° with respect to the  
3 longitudinal axis of the active electrode filament.

4

1                   23. The probe of claim 1, further comprising an electrically  
2 insulating spacer located proximal to the active electrode head.

3

1                   24. The probe of claim 23, wherein the spacer encircles the distal  
2 end of the active electrode filament.

3

1                   25. The probe of claim 23, wherein the spacer comprises a  
2 ceramic, a glass, or a silicone rubber.

3

1                   26. The probe of claim 24, wherein the spacer comprises alumina.

2

1                   27.                   The probe of claim 1, further comprising: a  
2 handle, the handle housing the connection block, and a shaft having a shaft distal  
3 face and a shaft proximal end, the handle affixed to the shaft proximal end.

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1                   28. The probe of claim 27, wherein the shaft comprises a multi-  
2 lumen extrusion.

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1           29.    The probe of claim 27, wherein the probe further comprises a  
2    an aspiration lumen internal to the shaft.

1           30.    The probe of claim 29, wherein the aspiration lumen  
2    terminates distally in an aspiration port.

1           31.    The probe of claim 30, wherein the shaft distal face includes a  
2    first plane and a second plane, and wherein the aspiration port occupies a portion of  
3    the first plane and a portion of the second plane.

1           32.    The probe of claim 31, wherein the second plane extends  
2    proximally from the first plane.

1           33.    The probe of claim 32, wherein the second plane subtends an  
2    angle in the range of from about 40° to 50° with respect to the first plane.

1           34.    The probe of claim 27, further comprising a fluid delivery  
2    lumen internal to the shaft.

1           35.    The probe of claim 34, wherein the fluid delivery lumen  
2    terminates distally in a fluid delivery port, the fluid delivery port located at the shaft  
3    distal face.

1           36.    The probe of claim 35, wherein at least a portion of the return  
2    electrode coil is aligned with the fluid delivery port.

1           37.    The probe of claim 1, wherein the active electrode and the  
2    return electrode each comprises a material selected from the group consisting of  
3    molybdenum, platinum, tungsten, palladium, iridium, titanium, and their alloys.

1           38.    An electrosurgical probe, comprising:

2 a shaft comprising a multi-lumen extrusion, the shaft having a shaft  
3 proximal end portion and a shaft distal end portion;  
4 an electrode assembly at the shaft distal end portion; and  
5 a connection block adapted for coupling the electrode assembly to an  
6 electrosurgical generator.

7  
1 39. The probe of claim 38, wherein the multi-  
2 lumen extrusion comprises a plastic tube.

3  
1 40. The probe of claim 38, wherein the multi-lumen extrusion  
2 comprises a polyurethane elastomer.

3  
1 41. The probe of claim 40, wherein the polyurethane elastomer is  
2 polyether based and includes from about 0.5% to 4% of carbon black.

3  
1 42. The probe of claim 38, wherein the multi-lumen extrusion  
2 includes a plurality of interior lumens.

3  
1 43. The probe of claim 38, wherein the multi-lumen extrusion  
2 includes first, second, third, and fourth lumens.

4  
1 44. The probe of claim 43, wherein the electrode assembly  
2 includes a return electrode and an active electrode, and the first and second lumens  
3 accommodate the return electrode and the active electrode, respectively.

3  
1 45. The probe of claim 43, wherein the third lumen comprises a  
2 fluid delivery lumen.

3  
1 46. The probe of claim 45, wherein the third lumen terminates  
2 distally in a fluid delivery port.

3  
1 47. The probe of claim 43, wherein the fourth lumen comprises an  
2 aspiration lumen.

3

1           48.    The probe of claim 47, wherein the fourth lumen terminates  
2    distally in an aspiration port.

3

1           49.    The probe of claim 42, wherein each of the plurality of  
2    interior lumens has a diameter in the range of from about 0.015 inch to 0.100 inch.

3

1           50.    The probe of claim 38, wherein the electrode assembly  
2    comprises an active electrode, the active electrode including an active electrode  
3    filament and an active electrode head.

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1           51.    The probe of claim 50, wherein the active electrode head  
2    comprises a hook.

3

1           52.    The probe of claim 50, wherein the active electrode head  
2    comprises an active electrode coil having about 1 turn.

3

1           53.    The probe of claim 52, wherein the active electrode head  
2    includes a dividing portion, the dividing portion spanning the active electrode coil to  
3    form a plurality of voids within the active electrode coil.

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1           54.    The probe of claim 38, further comprising a handle affixed to  
2    the shaft proximal end portion, the handle housing the connection block.

3

1           55.    The probe of claim 52, wherein the active electrode comprises  
2    a metal wire selected from the group consisting of molybdenum, platinum, tungsten,  
3    palladium, iridium, titanium, and their alloys.

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1           56.    The probe of claim 52, wherein an edge of the active  
2    electrode coil is offset from the longitudinal axis of the active electrode filament by  
3    a minimum distance in the range of from about 0.008 to about 0.016 inches.

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1                   57.    The probe of claim 52, wherein the active electrode coil has a  
2 diameter in the range of from about 0.050 to 0.150 inches.

1                   58.    The probe of claim 38, wherein the electrode assembly further  
2 comprises a return electrode, the return electrode including a return electrode  
3 filament and a return electrode head.

1                   59.                   The probe of claim 58, wherein the return  
2 electrode head comprises a return electrode coil having from about 3 to 10 turns.

1                   60.    The probe of claim 58, wherein the probe further comprises a  
2 connection block adapted for coupling the probe to a high frequency power supply,  
3 and the return electrode filament distal end is coupled directly to the connection  
4 block.

1                   61.    An electrosurgical probe, comprising:

2                   a shaft having a shaft proximal end portion and a shaft distal end  
3 portion; and

4                   an electrode assembly at the shaft distal end portion, the electrode  
5 assembly comprising an active electrode and a return electrode, the return electrode  
6 disposed within a lumen of the shaft, the return electrode in the form of a return  
7 electrode coil, the return electrode coil having an internal void, and the return  
8 electrode distal terminus arranged within the internal void.

1                   62.    The probe of claim 61, wherein the return electrode coil has  
2 from about 3 to 10 turns.

1                   63.    The probe of claim 61, wherein the internal void is  
2 substantially cylindrical.

1                   64.    The probe of claim 61, wherein the return electrode distal  
2 terminus is located at the proximal end of the internal void.

1           65.    The probe of claim 61, wherein the shaft comprises a multi-  
2 lumen tube having a plurality of lumens therein.

1           66.    The probe of claim 65, wherein the multi-lumen tube is an  
2 extrusion product.

1           67.    The probe of claim 66, wherein the multi-lumen tube  
2 comprises a polyether based polyurethane elastomer.

1           68.    The probe of claim 61, wherein the active electrode comprises  
2 an active electrode coil having from about 0.5 to 1.5 turns.

1           69.    The probe of claim 68, wherein the active electrode further  
2 comprises a dividing portion arranged within the active electrode coil.

1           70.    The probe of claim 69, wherein the dividing portion defines  
2 two voids within the active electrode coil.

1           71.    The probe of claim 68, wherein the active electrode coil is  
2 flattened.

1           72.    The probe of claim 71, wherein the active electrode coil is  
2 offset from the longitudinal axis of the shaft distal end portion.

1           73.    An electrosurgical probe, comprising:

2           a shaft having a shaft proximal end portion and a shaft distal end  
3 portion; and

4           an electrode assembly at the shaft distal end portion, the electrode  
5 assembly comprising an active electrode and a return electrode, the active electrode  
6 comprising a metal disc.

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1                   74.    The probe of claim 73, wherein the active electrode head has  
2    a sharp edge.

3

1                   75.    The probe of claim 73, further comprising a handle housing a  
2    connection block, wherein the return electrode includes a distal end portion and a  
3    proximal end portion, the proximal end portion inserted directly in the connection  
4    block.

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1                   76.    An electrosurgical probe, comprising:

2                   a shaft having a shaft proximal end portion and a shaft distal end  
3    portion;

4                   a return electrode comprising a return electrode coil; and

5                   an active electrode having a distal end portion and a proximal end  
6    portion, the distal end portion comprising an active electrode coil having from about  
7    0.5 to 1.5 turns, the active electrode coil oriented substantially orthogonal to the  
8    return electrode coil.

9

1                   77.    The electrosurgical probe of claim 76, wherein the active  
2    electrode coil includes a dividing portion, the dividing portion at least partially  
3    spanning an internal void within the active electrode coil.

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1                   78.    The probe of claim 76, wherein the active electrode coil is  
2    substantially circular in cross-section, the active electrode including a dividing  
3    portion, and the dividing portion bisecting the coil at an angle of about 45 degrees  
4    with respect to the shaft distal end portion.

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1                   79.                   The probe of claim 76, wherein the active  
2    electrode coil is flattened.

3

1           80.    The electrosurgical probe of claim 76, wherein the active  
2   electrode coil is substantially disc-shaped.

3

1           81.    The probe of claim 76, wherein the return electrode coil  
2   comprises from about 3 to 10 turns.

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1           82.    The electrosurgical probe of claim 76, wherein the active  
2   electrode lies within the return electrode coil.

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